

THE
UNIVERSAL TYPE CASTER
ITS DESIGN, CONSTRUCTION
AND OPERATION

UNIVERSAL
TYPE CASTER MATRICES
PRICES AND RATES FOR RENTAL

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UNIVERSAL TYPE-MAKER

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(Quotation Quads and Quotation Quad Matrix)

The Universal Typecaster /
Universal Type-Making Machine /
Nuernberger-Rettig Typecaster

This is a digital reprint of a portion of a book or booklet, the title of which is unknown to me, which describes the Universal Type Caster (also known as the Universal Type-Making Machine and the Nuernberger-Rettig Typecaster).

The material consists of what I am presuming is a frontispiece, followed by a section (pp. vii to xii) entitled "The Universal Type Caster[:] Its Design, Construction and Operation". This is followed directly by a single page, p. xiii, entitled "Universal Caster Matrices[:] Prices and Rates for Rental".

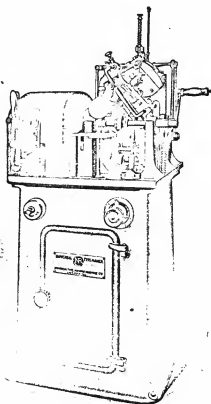
To this was appended (in my source copy) a single page, presumably from a different publication, which illustrates quotation quads and the matrix for quotation quads. It is numbered as p. 144 and is for the "Universal Type-Maker".

This material was received by me as a second or third generation photocopy. The illustrations, consequently, are not always legible. What is here is the best I can do. These scans were done at 1200 dpi, which probably captures all of the detail remaining in these photocopies.

My thanks to Sky Shipley of Skyline Type Foundry
<http://www.Skylinetype.com/>
for kindly giving me these photocopies.

This book bears no date (at least in the photocopies I have). However, the Universal Type-Making Machine Company ceased business at least two years before 1921 (when its Delaware charter was revoked), so clearly this book is in the public domain. The digital version of it here is also in the public domain.
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THE UNIVERSAL TYPE CASTER

THE UNIVERSAL TYPE CASTER

ITS DESIGN, CONSTRUCTION
AND OPERATION

THE great success the Universal Type Caster has met with, the reason why it immediately demonstrates its usefulness and economy wherever it is installed, is due entirely to the correctness of its design.

Starting with the assumption that the kind of type the printer wants is that which he has always used—foundry type that is perfect as to face, solid as to body, accurate in every dimension, and of tough and durable metal—the inventors of the Universal Type Caster set as the first requirement of their machine that it must produce type identical in every way with the best foundry type.

As these inventors knew from their long experience in designing and building type casting machines for type foundries, there is but one way to produce perfect type, and that is the method used by type foundries. Don't forget that the accumulated experience of four centuries counts for something. If there was a better and quicker method to make type than that used by type foundries, they would have adopted it years ago.

With the foregoing in mind, the Universal Type Caster was designed to produce type in the same way it is made by type foundries, but with its mechanism simplified so that after brief instruction it could be successfully operated by any person of ordinary intelligence.

In making type, accuracy is the first essential. Not only must every dimension of a type body be accurate to the last degree, but a type cast today must be exactly the same size as a type cast ten years hence from a different matrix and a different mold and by a different operator with a different machine. It has been demonstrated, over and over again, both by type foundries and ourselves, that this accuracy can-

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not be obtained with an adjustable mold. This is the reason why the Universal Type Caster uses a different mold for each point size.

In accordance with type foundry practice, which is based on the experience of centuries, the Universal Mold is made in two halves and constructed of the hardest of steel, the large bearing surfaces insuring that it will never show appreciable wear and will always cast type that is absolutely accurate. In all respects it is a regular type founder's mold, except that it has a movable jet-piece which is withdrawn by spring pressure as the mold leaves the nipple plate and



FIGURE 1
THE UNIVERSAL MOLD

carries the jet with it, so that the type produced requires no breaking or dressing to make it the correct height.

In Figure 1 is shown the strong, substantial construction of the Universal Mold. The view at the right is of the upper half of the mold, the spring jet-piece projecting from the left. The lower half of the mold is shown in the left-hand view, at the back appearing the other half of the jet-piece, while at the top is shown the projecting stool against which the top of the matrix is firmly held when casting. If desired, the alignment of the type can be changed by adjusting this stool. Just below this stool is shown the projection against which the side of the matrix is held.

After a type is cast the matrix withdraws from the character and the mold leaves the nipple plate and releases the spring of the jet-breaking device. This breaks off the jet and the ejector pushes out the jet as the mold opens.

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The type then falls into a chute which carries it to a box, from whence it can be transferred to a type case.

Figure 2 is a top view of the machine, showing the melting pot, pump, the water-cooled plates to which the two halves of the mold are attached, and the spring-compressed arm carrying the matrix, the latter projecting to the right of the machine. The lower half of the mold is seated on the two hollow pins projecting from the lower plate, which are threaded on their interiors to receive the screws which clamp this half of the mold firmly in position. The upper half of the mold is attached to the other plate by means of two screws.

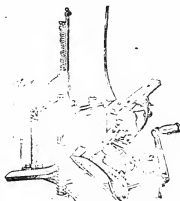


FIGURE 2
TOP VIEW OF THE MACHINE

When the mold is closed it is locked by the vertical rod, having a screw and clamp nut, shown in the foreground of Figure 2. This device is exceedingly rigid and insures the mold being entirely closed when casting, thus absolutely avoiding the possibility of bodies too large.

When the mold is thus locked the matrix is held firmly against the mold by a lever adjusted with a screw and lock nut, the two halves of the mold clamping it rigidly sidewise and a spring holding it tight against the alignment stool. Forced down by a powerful spring, the pump then drives the molten metal into the mold, holding it there under great pressure until the type has cooled enough to be ejected from the mold.

It is this scientific design of the Universal Type Caster, the rigidity with which the mold is locked, the firmness with

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which the matrix is held in position, and the great pressure behind the metal while it is being cooled, that makes it possible for the machine to produce such perfect type, clear and sharp as to face, solid as to body, and with every dimension absolutely correct.

The correct design of the Universal Type Caster is backed up by the most careful construction. Throughout the best material is used, the main shaft, arms, rollers, and all essential parts being of high-grade tool steel, hardened and tempered. Furthermore, all parts are interchangeable and manufactured with great accuracy. This means the profits the machine earns are not absorbed by excessive depreciation and costly repairs. The unanimous verdict of users is that seldom does any part of the machine ever wear out or require replacement. With only ordinary attention, such as any machine should receive, the Universal Type Caster can be depended on, year after year, to produce absolutely perfect type.

The operation of the Universal Type Caster is not at all difficult to learn. The majority of the machines are in charge of operators who have received only ten days' to two weeks' instruction from our erectors, this instruction having been given in the plants of purchasers when the machines were installed. The simple design of the machine, together with the fact that a different mold is used for each point size, means that the quality of the output is not dependent on the skill of the operator. Therefore, the user does not have to employ a skilled mechanic to operate the machine, but can select a composing room apprentice with an aptitude for machinery, or a compositor of ordinary intelligence. In many offices the machines are run by boys, under the supervision of the foreman or some older person, and in one plant a young girl has charge of the machine, producing a very satisfactory output of good type.

When an office is large enough to require running the machine continuously it is wise to employ a man to do nothing else but operate it. But in smaller plants that need

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the machine only now and then the best plan is to instruct a compositor, or someone constantly employed in the establishment, so that an operator will always be at hand when needed.

Not only is casting type with the Universal Type Caster a very simple matter, but the changes and adjustments of the machine are not at all complicated. One mold can be substituted for another in two minutes, and a matrix can be changed in half a minute. The line and set of the type to be cast are taken care of by the matrix, hence these require no adjustment. The pump is so designed that it may be easily removed if it should choke, and will cast a number of sizes without adjustment.

The machine is driven by a small motor in the base, or can be operated by line shafting, but the individual motor is best, as it saves power and permits the machine to be located in the most convenient position. Where power is not available the machine can be driven by hand, a crank being provided for that purpose. If power is used, a stop clutch gives an intermittent motion to the main shaft of the machine, allowing the mold to cast a type every revolution of the shaft, or every second, third, or fifth revolution, as may be desired, thus giving time for a "dwell" to allow the metal to cool in the mold and insuring solid bodies. The length of the "dwell" depends on the size of the type.

The average output of the Universal Type Caster is ten pounds per hour, ranging from four pounds per hour for six-point type, to fourteen pounds per hour for forty-eight-point. A greater output than this has been obtained by experts, but these figures are what the purchaser may expect from ordinary operators. By re-designing the machine so it would cast type with porous bodies, not accurate as to size, and with defective faces, a much greater output could have been secured. But that was not the object of its inventors. They knew the printer wanted real type, *foundry type*, hence they sacrificed output to quality. The result is that better

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type cannot be made than that cast by this machine. There is a limit to the speed at which molten-type metal can be cooled. This is governed by a natural law that nothing can overcome. It is as fixed and unalterable as the law of gravity. No machine can produce type with *solid* bodies and *perfect* faces at a greater speed than the Universal Type Caster.



Figure 3
LEAD AND SLUG MOLD

The regular equipment of the Universal Type Caster includes the complete machine, matrix holder for either Universal or Linotype matrices, and an equipment of molds for casting type, spaces, and quads in any six sizes from five and a half to forty-eight-point. Additional molds can be

rented for \$1.00 per day, time in transit, as well as Sundays and holidays, not included.

Molds for casting leads and slugs also can be purchased. These molds (see Figure 3) cost \$100 each. They cast leads two points thick and any length from four to twenty picas. By the use of mold blocks (\$50 for each point size) these molds can be adjusted to cast leads and slugs of any thickness up to twelve-point.

The Universal Type Caster occupies a floor space twenty-five by twenty-seven inches and is five feet high from the floor to the top of the pump-plunger piston. When equipped with motor, controller, and driving gear installed in the base, the weight is 950 pounds. One-third horse-power is required to drive the machine, and a three-eighths-inch gas pipe is used to supply the burner. A quarter-inch water pipe is required to cool the mold plates. A competent man is sent to erect the machine and give instruction in its operation for a period of two weeks.

UNIVERSAL TYPECASTER MATRICES

PRICES AND RATES FOR RENTAL

UNIVERSAL matrices are of the electrotype form and are made with great care, their manufacturing cost being nearly double that of an ordinary matrix of this kind.

Matrices may be rented by owners of the Universal Type Caster, for use on that machine, from our libraries at the rate of \$1.00 per day per font. Time in transit excepted, including Sundays and holidays.

Expressage of fonts to and from our libraries is paid by the customer. Rental is computed for the time the matrices are in your possession.

Matrices purchased from us by users of the Universal Type Caster may be exchanged upon payment of \$2.00 per font, provided the matrices are in good condition. In this way the user may keep a font as long as desired and then exchange it for any other font he may select.

Prices of fonts are as follows:

REGULAR FONTS (containing caps, lowercase, points, and figures)	PER FONT \$30.00
ROMAN FONTS (containing caps, lowercase, small caps, points, and figures)	35.00
CAP FONTS (containing caps, points, and figures)	20.00

QUOTATION QUAD MATRICES

Matrices for casting quotation or hollow quads may be obtained in the following sizes: $1\frac{1}{2}$ x 2 ems pica, 2 x 2 ems pica, $1\frac{1}{2}$ x 3 ems pica, 2 x 3 ems pica, 3 x 3 ems pica, $1\frac{1}{2}$ x 4 ems pica, 2 x 4 ems pica, 3 x 4 ems pica, 4 x 4 ems pica.

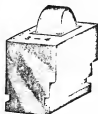


These quotations or hollow quads are cast in the regular space and quad molds. These matrices may be purchased, or the font of nine matrices rented at the rate \$1.00 per day.

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Quotation Quad Matrix
Made of tool steel, with hardened core



Quotation Quads

$1\frac{1}{2} \times 2$ ems, pica

2×2 " "

$1\frac{1}{2} \times 3$ " "

2×3 ems, pica

3×3 " "

$1\frac{1}{2} \times 4$ " "

2×4 ems, pica

3×4 " "

4×4 " "

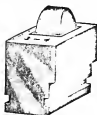
Quotation quads are cast in our regular space and quad molds and may either be purchased or rented

UNIVERSAL TYPE-MAKING MACHINE COMPANY, CHICAGO

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This annotation appears in the upper right margin of the photocopy of the previous page. I believe that it simply says "Nuemberger-Rettig".



Quotation Quad Matrix

NOTE THE
CONFIGURATION
THAT FITS THE
MATRIX CARRIER

This annotation appears in the middle right margin of the photocopy of the previous page. It says "Note the configuration that fits the matrix carrier".